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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/692,263	10/23/2003	Paul D. Bliley	100111538-1	1563

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EXAMINER	
MCCLOUD, RENATA D	

ART UNIT	PAPER NUMBER
2837	

DATE MAILED: 06/06/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No.	Applicant(s)	
	10/692,263	BLILEY ET AL.	
	Examiner	Art Unit	
	Renata McCloud	2837	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

1)☒ Responsive to communication(s) filed on *13 March 2006*.

2a)☒ This action is **FINAL**. 2b)☐ This action is non-final.

3)☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

4)☒ Claim(s) *1 and 4-34* is/are pending in the application.

4a) Of the above claim(s) _____ is/are withdrawn from consideration.

5)☐ Claim(s) _____ is/are allowed.

6)☒ Claim(s) *1 and 4-34* is/are rejected.

7)☐ Claim(s) _____ is/are objected to.

8)☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

9)☐ The specification is objected to by the Examiner.

10)☐ The drawing(s) filed on _____ is/are: a)☐ accepted or b)☐ objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).

11)☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

12)☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a)☐ All b)☐ Some * c)☐ None of:

1.☐ Certified copies of the priority documents have been received.

2.☐ Certified copies of the priority documents have been received in Application No. _____.

3.☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

1) ☐ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08) Paper No(s)/Mail Date _____.
4) ☐ Interview Summary (PTO-413) Paper No(s)/Mail Date. _____.
5) ☐ Notice of Informal Patent Application (PTO-152)
6) ☐ Other: _____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the first paragraph of 35 U.S.C. 112:

> The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

2. Claims 1, 4-34 rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the written description requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to reasonably convey to one skilled in the relevant art that the inventor(s), at the time the application was filed, had possession of the claimed invention. The limitations "wherein each are coupled by closing switches to form a discrete switch", "alternative closing of switches" , "independent electrically –powered component", "one high side switch is coupled as a first component of a switch" ,"one low side switch is coupled as a second component of a switch" are not described in the original specification.

3. The following is a quotation of the second paragraph of 35 U.S.C. 112:

> The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claim 1 rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

It is unclear what "each" refers to in line 9 of the claim.

It is unclear how one high side switch is coupled as a first component of a switch, when the high side switch is the switch.

It is unclear how one low side switch is coupled as a second component of a switch, when the low side switch is the switch.

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

> (a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negatived by the manner in which the invention was made.

6. Claims 1, 3-7, 17-22, 29, 30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Hella (DE4440064) in view of applicants admitted prior art.

Claim 1: Hella teaches a two high switches (Fig. 2:T1,T3) connected to a power source (+); two low switches (T2,T4) connected to ground (-); a first configuration of the H-bridge with the high and low switches connected together (T1 connected to T2 at X; T3 connected to T4 at Y) and coupled by closing the switches (Fig. 1: box labeled "BT" shows the on and off stages of the switches) to drive a motor (Fig. 1:M) as a first h-bridge configuration (fig. 1: B1); a second configuration (Fig. 1: B2) of the H-bridge, in which the high switches (fig. 2:T1, T3) are first components and the low switches are second components, where in each are coupled (T1,T2,T3,T4 are coupled) by closing switches to form a discrete where one high switch (T1) is coupled as a first component switch to a component (T1 of X coupled to 2Y) and the low switch is coupled to a different component (T4 of Y coupled to 2x), the first configuration (T1/T2, T3/T4) being different than the second configuration (T1/T4 , T3/T2, Fig. 3 shows the different configurations, as in, box 1 shows the configuration as an H-bridge and the 4th box shows the high side and low side combination configuration). It is unclear if Hella teaches the switches coupled together to independently drive a motor. Applicant's prior art teaches that it is well

known in the art that an H-bridge is configured to independently drive a motor (pg 1:0003). It would have been obvious to one having ordinary skill in the art at the time the invention was made use the H-bridge of Hella independently, as admitted by applicant in order to drive a motor.

Hella also teaches:

Claims 4, 17, 21: a first H-bridge that by alternative closing of switches (fig. 1:BT) including a first configuration as a first motor drive (Fig. 1: B1) and a second configuration as discrete switches (Fig. 1:B2) to be coupled to supply electricity (+,-) to different electrically powered components and a register to maintain an indicator of the first H-bridge as at least one of the first motor circuit or as the discrete switch (Abstract).

Claims 5,18,22: the register maintains the indicator that the configurable first H-bridge is configured as the discrete switches (Abstract; Fig. 1)

Claims 6, 19: the register maintains a switch indicator that indicates a configuration of a discrete switch (abstract; Fig. 1).

Claims 7, 20: a high switch (Fig. 2:T1) connected to a power source (+); a low switch (T2) connected to ground (-); a first configuration of the high and low switch connected together (T1 connected to T2 at X) to drive the motor (Fig. 1:M).

7. Claim 1 rejected under 35 U.S.C. 102(b) as being anticipated by Hella (EP0833437) in view of applicants admitted prior art.

Claim 1: Hella teaches a two high switches (referring to the first motor 50, switch 24 near 28, and switch 24 near 48) connected to a power source ("+" terminal at 18); a low switch (referring to the first motor 50, switch 26 near 36, and switch 26 near 48) connected to ground ("-" terminal at 22); a first configuration of the high and low switches connected together by

closing switches to drive the motor (50 driven by configuration switch configuration around it); a second configuration (configuration near 54 and 52) in which the high switches (24) are first components and the low switches (26) are second components, wherein each are coupled by closing switches to form discrete where one high switch (24) is coupled as a first component switch to a component (52) and one low switch (26) is coupled to a different component (54). It is unclear if Hella teaches the switches coupled together to independently drive a motor. Applicant's prior art teaches that it is well known in the art that an H-bridge is configured to independently drive a motor (pg 1:0003). It would have been obvious to one having ordinary skill in the art at the time the invention was made use the H-bridge of Hella independently, as admitted by applicant in order to drive a motor.

8. Claims 8, 9 rejected under 35 U.S.C. 103(a) as being unpatentable over Hella 064 and applicant's admitted prior art as applied to claim 4 above, and further in view of Hella (EP0833437)

Claim 8: Hella 064 and applicant teach the limitations of claim 4. Referring to claim 8 its unclear if they disclose a second motor being driven by an H-bridge. Hella 437 teaches a second H-bridge (24,26) to drive a second motor (50). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Hella 064 and applicant to use a second H-bridge as taught by Hella in order to drive a motor.

Claim 9: Hella and applicant teach the limitations of claim 4. Referring to claim 9 its unclear if they disclose a second motor being driven by an H-bridge. Hella 437 teaches a second H-bridge circuit (24,26) configured as a second motor drive circuit; a third H-bridge circuit (24,26) implemented as a third motor drive circuit; and wherein the second H-bridge

circuit is configured to drive the first motor (the second h-bridge is made up of the 4^{th}-6^{th} switches of 24/26), and the third H-bridge circuit is configured to drive a second motor in an event that the configurable first H-bridge circuit is configured as the discrete switches (the third h-bridge is mage of 5^{th}-8^{th} switches, the 5^{th} and 6^{th} of which drive the second motor). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Hella 064 and applicant to use a third H-bridge as taught by Hella in order to drive a motor.

9. Claims 10, 14,15,23-25, and 31-34 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrus et al (US 6082914) in view of Hella 437 and Applicant's admitted prior art.

Claims 10,23,31: Barrus et al teach a printing device, comprising: a first motor (Fig. 4: 230) configured for movable control of at least a first component in the printing device; a second motor (Fig. 4: 220) configured for movable control of at least a second component in the printing device; a multiple H-bridge circuit including: a first H-bridge circuit (274) configured to drive the first motor (230); a second H-bridge circuit (296) configured to drive the second motor (220); and a third H-bridge circuit that alternatively closes switches (304) that includes a first configuration as a motor drive circuit to drive a third motor (186). They do not teach the driver includes a second configuration as discrete switches that can each be coupled as a component switch or the h-bridge independently driving a motor. Hella '437 teach a first motor (M), a second motor (M); a first H-bridge driving the first motor (24,26); a second h-bridge (24,26) driving the second motor; and a third h-bridge (24,26) that switches having a first configuration driving a motor (M) and second configuration as discrete switches driving different electrically

powered components (52,54). Applicant's prior art teaches that it is well known in the art that an H-bridge is configured to independently drive a motor (pg 1:0003). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Barrus to use the H-bridge of Hella and Applicant in order to drive the motors.

Claim 14: Barrus et al, Hella '437, and Applicant teach the limitations of claim 10. Referring to claim 14, Hella teaches the third H-bridge circuit includes a high switch (24) connected to a voltage source (18) and includes a low switch (26) connected to ground, (22) and wherein the first configuration includes the high switch and the low switch connected together and coupled to drive the third motor (50).

Claim 15: Barrus et al, Hella '437, and Applicant teach the limitations of claim 10. Referring to claim 15, Hella teaches the third H-bridge circuit includes a high switch (24) connected to a voltage source (18) and includes a switch (26) connected to ground (22), and wherein the second configuration includes at least one of the high switch and the low switch coupled as the component switch (coupled to 52 and 54).

Claims 24,33: Barrus et al, Hella '437, and Applicant teach the limitations of claims 25,31. Referring to claims 24,33, Hella teaches coupling the third H-bridge to drive a third motor (M).

Claims 25, 34: Barrus et al, Hella '437, and Applicant teach the limitations of claims 23,31. Referring to claims 25,34, Hella teaches coupling the switch of the third H-bridge to a component in the second configuration (24, 26 coupled to 52,54)

Claim 32: Barrus et al, Hella '437, and Applicant teach the limitations of claim 31. Referring to claim 32, Hella teaches the second H-bridge circuit is configured to drive the first motor (the second h-bridge is made up of the 4^{th}-6^{th} switches of 24/26), and the third H-bridge circuit is configured to drive a second motor in an event that the configurable first H-bridge

circuit is configured as the discrete switches (the third h-bridge is mage of 5^{th}-8^{th} switches, the 5^{th} and 6^{th} of which drives the second motor).

10. Claims 29,30 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrus et al (US 6082914) in view of Hella 437 .

Claim 29: Hella 064 teaches a first H-bridge that by alternative closing of switches (fig. 1:BT) including a first configuration as a first motor drive (Fig. 1: B1) and a second configuration as discrete switches (Fig. 1:B2) to be coupled to supply electricity (+,-) to different electrically powered components and a register to maintain an indicator of the first H-bridge as at least one of the first motor circuit or as the discrete switch (Abstract) to supply electricity to independent electrically-powered components. Hella does not teach a printing device. Barrus teaches a printing device (abstract; fig. 1). It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Hella to be used in a printing device in order to control the printer motor.

Claim 30: Hella teaches a high switch (Fig. 2:T1) connected to a power source (+); a low switch (T2) connected to ground (-); a first configuration of the high and low switch connected together (T1 connected to T2 at X) to drive the motor (Fig. 1:M).

11. Claims 11-13,16,26-28 are rejected under 35 U.S.C. 103(a) as being unpatentable over Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art as applied to the claims 10,23 above, further in view of Hella 064

Claims 11, 26: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claims 10,23. Referring to claims 11,26, it is unclear if they teach a

configuration register configured to maintain an indicator of the H-bridge circuit configuration. Hella '064 teaches a configuration register configured to maintain an indicator of the H-bridge circuit configuration (abstract).

Claim 12 Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 10. Referring to claim 12, it is unclear if they teach a configuration register configured to maintain an indicator of the H-bridge circuit configured as discrete switches. Hella '064 teaches a configuration register configured to maintain an indicator of the H-bridge circuit configuration (abstract).

Claim 13: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 10. Referring to claim 13, its is unclear if they teach a configuration register configured to maintain an indicator that an H-bridge circuit is configured as the discrete switches, the configuration register further configured to maintain a switch indicator that indicates a configuration of a discrete switch. Hella '064 teaches a configuration register configured to maintain an indicator that an H-bridge circuit is configured as the discrete switches, the configuration register further configured to maintain a switch indicator that indicates a configuration of a discrete switch (abstract).

Claim 16: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 10 and referring to claim 16 Hella '437 teaches the H-bridge is in an ASIC. It is unclear if they teach a register. Hella '064 teaches and ASIC (fig. 1:IB) and a register (abstract).

Clam 27: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 23 and referring to claim 27, Hella '437 teaches coupling the third H-bridge to drive a third motor (M). It is unclear if they teach a configuration register to indicate a

configuration of the third H-bridge circuit. Hella '064 teaches a configuration register to indicate a configuration of a third H-bridge circuit.

Clam 28: Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art teach the limitations of claim 23 and referring to claim 28 Hella '437 teaches coupling the third H-bridge to drive a component (52,54). It is unclear if they teach a configuration register to indicate a configuration of the third H-bridge circuit. Hella '064 teaches a configuration register to indicate a configuration of a third H-bridge circuit.

It would have been obvious to one having ordinary skill in the art at the time the invention was made to modify the apparatus taught by Barrus et al (US 6082914), Hella 437 and Applicant's admitted prior art *to use a configuration register as taught by Hella '064, in order to control which H-bridge drives a certain one of a plurality of motors.*

Response to Arguments

12. Applicant's arguments filed 03/13/2006 have been fully considered but they are not persuasive.

In response to Applicant's argument that the prior art does not teach closing switches to independently drive a motor, Applicant's claim language is broad does not disclose which switches are closed. An H-bridge functions by opening and closing switches, therefore the prior art reads on the claim language.

In response to applicant's arguments against the references individually, one cannot show nonobviousness by attacking references individually where the rejections are based on combinations of references. See *In re Keller*, 642 F.2d 413, 208 USPQ 871 (CCPA 1981); *In re Merck & Co.*, 800 F.2d 1091, 231 USPQ 375 (Fed. Cir. 1986).

Conclusion

13. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Renata McCloud whose telephone number is (571) 272-2069. The examiner can normally be reached on Mon.- Fri. from 5:30 am - 2pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Lincoln Donovan can be reached on (571) 272-2800 ext. 37. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see http://pair-direct.uspto.gov. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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